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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,353	06/12/2001	Richard Carl Phelps	032658-016	7825
42015	7590	05/28/2004	EXAMINER	
POTOMAC PATENT GROUP PLLC			CLEARY, THOMAS J	
P. O. BOX 855			ART UNIT	PAPER NUMBER
MCLEAN, VA 22101			2111	

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/787,353

Applicant(s)

PHELPS ET AL.

Examiner

Thomas J. Cleary

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 1-29 and 34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 30-33 and 35-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over The Universal Serial Bus Specification Revision 1.0 ("USB") in view of IEEE Standard 1394-1995 ("IEEE-1394") and US Patent Number 4,709,364 to Hasegawa et al. ("Hasegawa").
3. In reference to Claim 30, USB teaches a bus architecture (See Page 28 Figure 4-1 and Page 27 Paragraph 1); a plurality of modules connected to the bus architecture (See Page 28 Figure 4-1 and Page 27 Paragraph 1); and an arbitration unit for granting access to the bus, the granting of access being in the form of a dedicated packet issued from the arbitration unit, whereby only the module which has been granted access can use that particular dedicated packet to gain access to the bus (See Page 30 Section 4.4). USB does not teach that the arbitration unit grants access to the bus in response to requests received from the modules; and that the arbitration unit is operable to issue

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empty packets during periods when the bus is idle, the empty packets being usable by a module to gain access to the bus without making a specific request to the arbitration unit for a dedicated packet. IEEE-1394 teaches an arbitration unit granting access to the bus in response to requests received from the modules (See Page 33 Paragraphs 2-4). Hasegawa teaches sending an empty packet during periods when the bus is idle that are usable by a module to gain access to the bus without making a specific request to the arbitration unit for a dedicated packet (See Column 1 Lines 16-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the bus system of USB with the arbitration requests of IEEE-1394 and the empty packets of Hasegawa, resulting in the invention of Claim 30, because USB and IEEE-1394 are both commonly used serial bus protocols; because arbitration requests allow each device to request fair access to the bus (See Pages 33 and 34 of IEEE-1394); and to reduce the latency of arbitration by providing an indication that the bus is free and thus does not require a request to a central arbiter to be performed (See Column 1 Lines 16-21 of Hasegawa).

4. In reference to Claim 31, USB, IEEE-1394, and Hasegawa teach the limitations as in Claim 30 above. Hasegawa further teaches that the first module to use the empty packet gains access to the bus (See Column 1 Lines 16-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the bus system of USB with the arbitration requests of IEEE-1394 and the empty packets of Hasegawa, resulting in the invention of Claim 31,

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because USB and IEEE-1394 are both commonly used serial bus protocols; because arbitration requests allow each device to request fair access to the bus (See Pages 33 and 34 of IEEE-1394); and to reduce the latency of arbitration by providing an indication that the bus is free and thus does not require a request to a central arbiter to be performed (See Column 1 Lines 16-21 of Hasegawa).

5. In reference to Claim 33, USB, IEEE-1394, and Hasegawa teach the limitations as in Claim 30 above. USB further teaches that the hub, which is equivalent to the arbitration unit, is located at one end of the bus (See Page 28 Figure 4-1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the bus system of USB with the arbitration requests of IEEE-1394 and the empty packets of Hasegawa, resulting in the invention of Claim 33, because USB and IEEE-1394 are both commonly used serial bus protocols; because arbitration requests allow each device to request fair access to the bus (See Pages 33 and 34 of IEEE-1394); and to reduce the latency of arbitration by providing an indication that the bus is free and thus does not require a request to a central arbiter to be performed (See Column 1 Lines 16-21 of Hasegawa).

6. In reference to Claim 35, USB, IEEE-1394, and Hasegawa teach the limitations as in Claim 30 above. USB further teaches that a universal serial bus is part of a computer system (See Page 27 Paragraph 1).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the bus system of USB with the arbitration requests of IEEE-1394 and the empty packets of Hasegawa, resulting in the invention of Claim 35, because USB and IEEE-1394 are both commonly used serial bus protocols; because arbitration requests allow each device to request fair access to the bus (See Pages 33 and 34 of IEEE-1394); and to reduce the latency of arbitration by providing an indication that the bus is free and thus does not require a request to a central arbiter to be performed (See Column 1 Lines 16-21 of Hasegawa).

7. In reference to Claim 39, USB teaches a method of granting bus access to a module in a computer system comprising a plurality of modules interconnected by the bus (See Page 28 Figure 4-1 and Page 27 Paragraph 1); and an arbitration unit for granting access to the bus by issuing dedicated (See Page 30 Section 4.4). USB does not teach that the arbitration unit grants access to the bus in response to requests received from the modules; issuing empty packets from the arbitration unit during periods when the bus is idle; and, allowing any module to use the empty packet in order to gain access to the bus. IEEE-1394 teaches an arbitration unit granting access to the bus in response to requests received from the modules (See Page 33 Paragraphs 2-4). Hasegawa teaches sending an empty packet during periods when the bus is idle that are usable by a module to gain access to the bus without making a specific request to the arbitration unit for a dedicated packet (See Column 1 Lines 16-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the bus system of USB with the arbitration requests of IEEE-1394 and the empty packets of Hasegawa, resulting in the invention of Claim 39, because USB and IEEE-1394 are both commonly used serial bus protocols; because arbitration requests allow each device to request fair access to the bus (See Pages 33 and 34 of IEEE-1394); and to reduce the latency of arbitration by providing an indication that the bus is free and thus does not require a request to a central arbiter to be performed (See Column 1 Lines 16-21 of Hasegawa).

8. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over USB, IEEE-1394, and Hasegawa as applied to Claim 30 above, and further in view of US Patent Number 5,400,334 to Hayssen ("Hayssen").

9. In reference to Claim 32, USB, IEEE-1394, and Hasegawa teach the limitations as applied to Claim 30 above. USB, IEEE-1394, and Hasegawa do not teach that each module has means for converting a dedicated packet intended for itself into an empty packet. Hayssen teaches receiving a token indicating it has control of the bus, which is equivalent to a dedicated packet intended for itself, and converting said token into a free token, which is equivalent to an empty packet (See Column 3 Lines 29-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of USB, IEEE-1394, and Hasegawa ability to convert a token to a free token of Hayssen, resulting in the invention of Claim 32, in



order to provide an indication that the bus is now free for other devices to transmit data (See Column 3 Lines 12-22 of Hayssen).

10. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over USB, IEEE-1394, and Hasegawa as applied to Claim 30 above, and further in view of US Patent Number 6,232,932 to Thorner ("Thorner").

11. In reference to Claim 36, USB, IEEE-1394, and Hasegawa teach the limitations as applied to Claim 30 above. USB, IEEE-1394, and Hasegawa do not teach an integrated circuit comprising apparatus as claimed in Claim 30. Thorner teaches a device having USB functionality available on an integrated circuit (See Column 13 Lines 9-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of USB, IEEE-1394, and Hasegawa on the integrated circuit of Thorner, resulting in the invention of Claim 36, because it is well known that microcontrollers having USB functionality integrated into the microcontrollers on-chip peripherals are available and USB functionality can be implemented by readily available integrated circuits (See Column 13 Lines 11-15 of Thorner).

12. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over USB, IEEE-1394, and Hasegawa as applied to Claim 30 above, and further in view of US Patent Number 5,912,710 to Fujimoto ("Fujimoto").

13. In reference to Claim 37, USB, IEEE-1394, and Hasegawa teach the limitations as applied to Claim 30 above. USB, IEEE-1394, and Hasegawa do not teach a graphics processing system comprising apparatus as claimed in Claim 30. Fujimoto teaches a graphics processing system having a USB interface (See Column 10 Line 61 – Column 11 Line 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of USB, IEEE-1394, and Hasegawa in the graphics processing system of Fujimoto, resulting in the invention of Claim 37, in order to allow peripheral devices to be connected to the graphics processing system (See Column 10 Lines 61-63 of Fujimoto).

14. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over USB, IEEE-1394, and Hasegawa as applied to Claim 30 above, and further in view of US Patent Number 5,986,644 to Herder et al. ("Herder").

15. In reference to Claim 38, USB, IEEE-1394, and Hasegawa teach the limitations as applied to Claim 30 above. USB, IEEE-1394, and Hasegawa do not teach a games console comprising apparatus as claimed in Claim 30. Herder teaches a games console having a communications bus such as USB (See Column 2 Line 56 – Column 3 Line 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of USB, IEEE-1394, and Hasegawa in the games console of Herder, resulting in the invention of Claim 38, in order to allow devices to provide information to control the games console and information processed by and/or displayed by the games console (See Column 2 Line 66 – Column 3 Line 4 of Herder).

### ***Drawings***

16. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Figure 1 Numbers 1 and 2; Figure 13 Letters D and H; Figure 14 Numbers 28 and 29; Figures 15, 16, 17, 18, and 19 Number 30; Figure 21 Numbers 35, 36, and 37; Figure 22 Numbers 39, 40, 41, and 42; Figure 26 Numbers 56, and 57; Figure 28 Number 73; Figure 29 Number 84. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

17. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "A" has been used to designate both "start" in Figure 13 and "assign initial stack positions" on Page 17 Lines 15-17. A proposed drawing

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correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

18. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "B" has been used to designate both "assign initial stack positions" in Figure 13 and "receive respective transaction requests" on Page 17 Lines 22-23. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

19. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "C" has been used to designate both "receive transaction request" in Figure 13 and "determine highest priority level" on Page 17 Lines 28-30. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

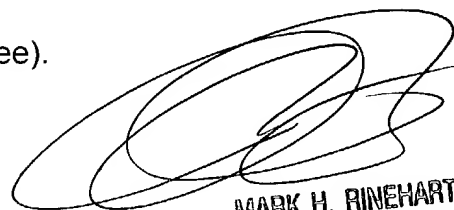
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Cleary whose telephone number is 703-305-5824. The examiner can normally be reached on Monday-Thursday (7-4), Alt. Fridays (7-3).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H. Rinehart can be reached on 703-305-4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJC



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